

REMARKS

Applicant thanks the Examiner for the indication of allowable subject matter in Claims 19-24 and 32-37. Reconsideration and reexamination is requested in view of the above amendments to the claims and the following remarks. Claims 1, 26, and 53 have been amended and new Claims 55-57 have been added. Specifically, the limitation that the thermoplastic sheet is continuous has been deleted from Claims 1, 26, and 53 and introduced into new Claims 55-57. Claims 43 and 45 have been amended to clarify that the fringe material extends from opposed peripheral edges of the release sheet as shown in Fig. 3. Claim 44 has been amended to provide antecedent basis for the term "substrate." Claims 1, 2, 16-38, 40-45, and 48-57 are pending in this application.

A. New Matter Objection

The Examiner maintains her objection to the sentence added at the end of the paragraph at page 7, line 24, in the Amendment filed Jan. 8, 2003, under 35 U.S.C. 132(a). The Examiner maintains that the following sentence added at the end of the paragraph at page 7, line 24, is considered new matter: "As shown in Fig. 3, a fringe material can be applied to peripheral edges of the flocked release sheet 1 or substrate 15 during this manufacturing process." As set forth above, Applicants have amended the specification to recite that "a fringe material can be applied to opposed peripheral edges of the flocked release sheet 1 or substrate 15 during this manufacturing process." Fig. 3 clearly illustrates the flocked release sheet as having a fringe material at opposed peripheral edges.

B. Claim Objections

i. Claims 25 and 38

The Examiner objects to Claims 25 and 38 as being of improper dependent form under 37 C.F.R. 1.75(c) for failing to further limit the subject matter of a previous claim. Claims 1 and 26 require that the thermoplastic sheet is pre-formed. However, Claims 25 and 38 do further limit Claims 1 and 26 respectively as Claims 1 and 26 specify the physical structure of the

thermoplastic sheet generally when in contact with the flock, but do not specifically specify the structure of thermoplastic sheet before contact with the flock as in Claims 25 and 38 respectfully. Therefore, Claims 25 and 38 add limitations not found in the respective independent claims. For this reason, Applicants request the objections to Claims 25 and 38 be withdrawn.

ii. Claim 41

The Examiner objects to Claim 41 as being of improper dependent form under 37 C.F.R. 1.75(c) for failing to further limit the subject matter of a previous claim. The Examiner contends that Claim 26 has been amended to limit at least most of the flock to being in direct physical contact with the thermoplastic hot melt sheet and thus Claim 41 is not further limiting of Claim 26. Applicant respectfully disagrees with the Examiner's position. Claim 41 requires that the flock of Claim 26 more specifically comprises a plurality of flock fibers and that at least most of the plurality of flock fibers are in direct contact with the hot melt sheet. Thus, Applicant requests the objection to Claim 41 be withdrawn.

C. 35 U.S.C. 112 Rejections

i. Claims 43 and 45

Claims 43 and 45 were rejected under 35 U.S.C., first paragraph because the Examiner contends that the specification as originally filed does not provide support for the fringe material on more than two edges or from the edges of the substrate. Claims 43 and 45 have been amended to specify that a fringe material extends outwardly from opposed peripheral edges of the release sheet as shown in Fig. 3 of the specification. Applicant thus requests the rejections of Claims 43 and 45 under 35 U.S.C. 112, first paragraph be withdrawn.

ii. Claims 51 and 52

Claims 51 and 52 were rejected under 35 U.S.C. 112, first paragraph because the Examiner contends that the specification does not support the limitation that substantially none of the thermoplastic hot melt sheet fails to contact free ends of the flock. The requirement that the sheet is continuous has been removed from Claims 1 and 26. Thus, the hot melt sheet need

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not be continuous in independent Claims 1 and 26 and thus do not contradict the limitation of Claims 51 and 52. Accordingly, Applicant requests the rejections of Claims 51 and 52 under 35 U.S.C. 112, second paragraph be withdrawn.

ii. Claims 44 and 45

Claim 44 was amended to provide antecedent basis for the term “substrate.” Thus, Applicant requests the rejections of Claims 44 and 45 under 35 U.S.C. 112, second paragraph be withdrawn.

D. 35 U.S.C. 103 Rejections

Claims 1, 2, 16-18, 25-31, 38, 40-42, 44, 48, and 49 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,687,527 to Higashiguchi (Higashiguchi) in view of U.S. Patent No. 4,810,549 to Abrams (“Abrams”). Applicant respectfully traverses the rejections for the following reasons.

Neither Higashiguchi nor Abrams teach or suggest, individually or collectively, the resulting product of the process of the present invention, including at least the following italicized language in each of the following independent claims as amended.

1. A flocked transfer comprising:
a release sheet;
a release agent on the release sheet;
flock on the release agent; the flock being formed in a desired pattern on the release sheet,
the release agent holding the flock to the release sheet;
a pre-formed, solid, continuous, and self-supporting thermoplastic hot melt sheet;
wherein at least substantially all of the flock contacts the thermoplastic hot melt sheet;
and wherein there is no binder adhesive positioned between the thermoplastic hot melt sheet and the flock.

26. A flocked transfer comprising:
a release sheet;
a release agent on the release sheet;

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flock on the release agent; the flock being formed in a desired pattern on the release sheet; the release agent being located between the flock and release sheet and holding the flock to the release sheet, and

a pre-formed, solid and self-supporting thermoplastic hot melt sheet engaging free ends of the flock, the flock being located between the release agent and the thermoplastic hot melt sheet, wherein at least most of a free surface of the flock is in direct physical contact with the thermoplastic hot melt sheet; and

wherein the thermoplastic hot melt sheet has a substantially uniform thickness and substantially flat upper and lower surfaces and wherein the flock fibers are substantially perpendicular to the upper and lower surfaces and to the release sheet.

53. A flocked transfer comprising:
a release sheet;
a release agent on the release sheet;
flock adhered to the release agent; the flock being formed in a desired pattern on the release sheet, the release agent holding the flock to the release sheet;
a pre-formed, solid and self-supporting thermoplastic hot melt sheet having a length and a width, and a first side engaging free ends of the flock;
a substrate adhered to a second side of said thermoplastic hot melt sheet
wherein at least substantially most of the flock is adhered to the hot melt sheet;
and wherein there is no binder adhesive positioned between the flock and the substrate.

Higashiguchi

Higashiguchi teaches a method for printing a predetermined flock pattern on a substrate using a cross linking type synthetic resin as the printing ink. The printing ink/adhesive is screen printed as a layer 16 on a fabric substrate 12 in a predetermined design pattern. Thereafter, Higashiguchi teaches that a flock sheet or mount is applied endways to the adhesive layer by pressing with heat the flock fibers against the adhesive layer in the design pattern. Subsequently, the flock sheet is peeled off the substrate surface to transfer the bonded flock fibers from the flock sheet to the substrate. See Higashiguchi, col. 4, line 60 to col. 5, line 50.

Abrams

Abrams is directed to a multicolor flock transfer comprising a base sheet having a surface area coated with a release adhesive, precolored flock of at least two different colors that are

longer than 0.3 mm having ends adhering to the surface area in the form of predetermined color patterns of a design, and a binding adhesive applied to other ends of the precolored flock, whereby the predetermined color patterns of the design of the multicolor flock are adapted to be transferred onto a product. *See Claim 1 of Abrams.* Further, according to Abrams at col. 2, lines 55-68, “[t]he flock 8 is coated with a binder adhesive 10 such as a water based acrylic 1 which binds the flock into a unit. The binder 10 may contain an additional adhesive, a hot melt, for binding the transfer to a substrate...” (Emphasis added). As shown in Fig. 2 of Abrams, the hot melt surface 12 is placed against the textile 14, thereafter heat and pressure are applied to the release sheet 4 in order to bond the transfer to the substrate. The release sheet 4 with the adhesive 6 is then pulled away from the flock 8 to permanently affix the transfer to the substrate. As a result of the binder being applied to ends of the flock, the flock will not be perpendicular to the release sheet or adhesive after applying pressure and heat to adhere the flock to a substrate.

1. The combination of Higashiguchi and Abrams does not teach or suggest a pre-formed, solid, and self-supporting thermoplastic sheet

Claims 1, 26, and 53 are patentable over the combination of Higashiguchi and Abrams because the combination of Higashiguchi and Abrams does not teach or suggest a pre-formed, solid, and self-supporting sheet as claimed. Applicant notes that the pre-formed, solid, and thermoplastic sheet is indeed a structural limitation as the physical characteristics of the sheet are claimed. Higashiguchi teaches a screen-printed adhesive in the form of resin that is patterned onto a substrate. Thereafter, Higashiguchi teaches that a flock sheet or mount is applied endways to the adhesive layer by pressing (with heat) the flock fibers against the adhesive layer in the design pattern. Subsequently, the flock sheet is peeled off the substrate surface to transfer the bonded flock fibers from the flock sheet to the substrate. The adhesive of Higashiguchi is a resin and not in the form of a pre-formed, solid, and self-supporting sheet.

Abrams, on the other hand, is directed to a multicolor flock transfer comprising a base sheet having a surface area coated with a release adhesive, precolored flock of at least two different colors that are longer than 0.3 mm having ends adhering to the surface area in the form of predetermined color patterns of a design, and a binding adhesive applied to other ends of the precolored flock, whereby the predetermined color patterns of the design of the multicolor flock are adapted to be transferred onto a product. *See* Claim 1 of Abrams. Further, according to Abrams at col. 2, lines 55-68, “[t]he flock 8 is coated with a binder adhesive 10 such as a water based acrylic 1 which binds the flock into a unit. The binder 10 may contain an additional adhesive, a hot melt, for binding the transfer to a substrate...” (Emphasis added). The adhesive of Abrams is thus provided in the form of a solution or emulsion. Accordingly, the combination of Higashiguchi or Abrams do not teach or suggest a pre-formed, solid, and self-supporting sheet. For this reason alone, Claims 1, 26, and 53, and all claims dependent thereon, are patentable over Higashiguchi and Abrams.

2. Higashiguchi teaches away from a flocked transfer assembly

First, Claims 1 and 26, and all claims dependent thereon, are nonobvious over Higashiguchi in view of Abrams because Higashiguchi clearly teaches away from the present invention. In rejecting the present claims, the Examiner must consider a reference in its entirety, as a whole, including the portions that would lead away from the claimed invention. *See* MPEP 2141.02. In addition, teaching away is a per se demonstration of a lack of prima facie obviousness. *In re Dow Chemical*, 837 F.2d 469 (Fed. Cir. 1988). Further, “[a] reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant...” *In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1131 (Fed. Cir. 1994).

Higashiguchi clearly teaches away from the claimed invention. The Examiner cannot properly disregard the portions of Higashiguchi that teach away from the claimed invention. In particular, Higashiguchi discloses a method for printing a predetermined flock pattern on a substrate using a cross linking type synthetic resin as the printing ink. The printing ink/adhesive is screen-printed as a layer 16 on a fabric substrate 12 in a predetermined design pattern. Because the adhesive of Higashiguchi is already screen-printed on the substrate directly in a pattern, the teachings of Higashiguchi would lead one skilled in the art on a path divergent from a flocked transfer that could be sold independently of the substrate. For this reason alone, Claims 1 and 26, and all claims dependent thereon, are novel and nonobvious over Higashiguchi in view of Abrams.

3. The combination of Higashiguchi and Abrams would change the principle of operation of Higashiguchi

Claims 1 and 26, and all claims dependent thereon, are further nonobvious over Higashiguchi in view of Abrams because the proposed modification of the teachings of Higashiguchi with the teaching of Abrams would change the principle of operation of the prior art reference (Higashiguchi) being modified. “If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the prior art are not sufficient to render the claims prima facie obvious.” See MPEP 2143.01. See also *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (Claims were directed to an oil seal comprising a bore engaging portion with outwardly biased resilient spring fingers inserted in a resilient sealing member. The primary reference relied upon in a rejection based on a combination of references disclosed an oil seal wherein the bore engaging portion was reinforced by a cylindrical sheet metal casing. Patentee taught the device required rigidity for operation, whereas the claimed invention required resiliency. The court reversed the rejection holding the “suggested combination of references would require a substantial

reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.” 270 F.2d at 813, 123 USPQ at 352.).

As discussed above, Higashiguchi discloses a method for printing a predetermined flock pattern on a substrate using a cross linking type synthetic resin as the printing ink. The printing ink/adhesive is screen printed as a layer 16 on a fabric substrate 12 in a predetermined design pattern. *See Higashiguchi*, col. 4, lines 65-68. Thus, the resulting product must include a substrate and a patterned adhesive. Modifying the article of Higashiguchi to comprise only a flocked transfer (as in Abrams) that could later be adhered to a substrate would change the principle of operation of Higashiguchi and would require a substantial reconstruction and redesign of Higashiguchi. To arrive at the flocked transfer of the claimed invention, Higashiguchi could no longer screen-print an adhesive onto a substrate, which is entirely Higashiguchi’s offered solution for transferring a flock pattern of flock fibers to a material without employing a conventional patterned flock transferring material. *See Higashiguchi*, col. 3, lines 5-8. Therefore, Claims 1 and 26, and all claims dependent thereon, are novel and nonobvious over Higashiguchi in view of Abrams.

4. The proposed modification of Higashiguchi with Abrams would render Higashiguchi unsatisfactory for its intended purpose

Similarly, Claims 1 and 26 are nonobvious because the proposed modification of Higashiguchi would render the invention of Higashiguchi unsatisfactory for its intended purpose. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). In the same way, modifying the article of Higashiguchi to comprise a flocked transfer (as in Abrams) that could later be adhered to a substrate would render Higashiguchi unsatisfactory for its intended purpose.

Higashiguchi's proposed offered solution for transferring a flock pattern of flock fibers to a material without employing a conventional patterned flock transferring material is to screen-print the adhesive directly on the substrate and apply a flocked paper to the substrate. *See* Higashiguchi, col. 3, lines 5-8. If one were to eliminate the substrate, therefore, the solution offered by Higashiguchi would be completely nullified. Therefore, Claims 1 and 26, and all claims dependent thereon, are further novel and nonobvious over Higashiguchi in view of Abrams.

5. Higashiguchi teaches away from Claims 26 and 53

Higashiguchi also teaches away from Claims 26 and 53, which requires that at least most of a free surface of the flock is in direct physical contact with the thermoplastic hot melt sheet (Claim 26) and that at least substantially most of the flock is adhered to the thermoplastic hot melt sheet (Claim 53). Instead, Higashiguchi discloses an adhesive screen-printed in a predetermined pattern on a substrate. Thereafter, a solidly flocked paper is applied to the adhesive. As a result, as shown in Fig. 5, by patterning the adhesive on the substrate in contrast to the claimed invention, substantially most of a second surface of the flock is not adhered to an adhesive (i.e. a thermoplastic sheet) in Higashiguchi as claimed. Accordingly, Higashiguchi teaches away from Claims 26 and 53. One skilled in the art, upon a reading of Higashiguchi, would further be led on a path divergent from the claimed invention, wherein at least substantially most of a free surface of the flock is in direct physical contact with the thermoplastic hot melt sheet (Claim 26) and wherein at least substantially most of the flock is adhered to the thermoplastic hot melt sheet (Claim 53) as doing so would not only result in waste of the flock, but also would result in waste of the adhesive when cutting the article to a desired shape or pattern. The claimed invention has found that while some flock and adhesive may be wasted, a pre-formed, solid, and self-supporting sheet having at least substantially most of a free

surface of flock in direct physical contact with the sheet (Claim 26) and at least substantially most of the flock adhered to the thermoplastic hot melt sheet (Claim 53) enables flocked articles to be produced in a continuous fashion.

6. The combination of Higashiguchi and Abrams does not teach or suggest the absence of a binder adhesive as claimed

Moreover, Claims 1 and 53 are further patentable because neither Higashiguchi nor Abrams, alone or in combination teach or suggest a flocked transfer or flocked article, wherein there is no binder adhesive positioned between a pre-formed, solid, and self-supporting thermoplastic sheet and the flock (Claim 1) or between the flock and a substrate (Claim 53).

According to Higashiguchi, at col. 4, lines 32-43:

The synthetic resins suitable for the present invention are those of self-crosslinking type or reactive crosslinking type which are used as the so-called binders of printing inks.

As is well known, the synthetic resins used as binders not only have the function of binding the pigments together which constitute the ink, but also impregnate the fibrous tissues such as papers and cloths constituting the surface to be printed, and hold together these fibrous tissues and the pigments printed on the surface of the tissue, thereby assuring good adherence therebetween.
(Emphasis added).

Thus, Higashiguchi fails to teach a transfer having no binder adhesive (*see* col. 4, lines 32-43 of Higashiguchi) between a pre-formed, solid, and self-supporting thermoplastic sheet and the flock or between the flock and a substrate.

Abrams fails to fill in the deficiencies of Higashiguchi. Abrams expressly teaches at col. 2, lines 55-68 that, “[t]he flock 8 is coated with a binder adhesive 10 such as a water based acrylic 1 which binds the flock into a unit. The binder 10 may contain an additional adhesive, a hot melt, for binding the transfer to a substrate...” (Emphasis added). Thus, neither Higashiguchi nor Abrams, alone or in combination, teach or suggest a flocked transfer or flocked

article, wherein there is no binder adhesive positioned between a pre-formed, solid, and self-supporting thermoplastic sheet and flock (Claim 1) or between the flock and a substrate (Claim 53).

E. Dependent Claims

The dependent claims provide further reasons for allowance.

Dependent Claim 2 is directed to the thermoplastic hot melt being a thermoplastic blank or thermoplastic blank film. (*See also* Claim 28).

Dependent Claim 16 is directed to the release sheet and release agent being located on a first surface of the flock and the thermoplastic hot melt sheet being positioned on a second surface of the flock and the first and second surfaces are in opposing relationship.

Dependent Claim 17 is directed to a thermoplastic hot melt sheet comprising polyurethane. (*See also* Claim 30).

Dependent Claim 18 is directed to the hot melt sheet being cut, before application to the flocked transfer, to correspond to a shape of the flocked transfer. Neither Higashiguchi nor Abrams teaches a hot melt sheet which corresponds to the shape of the flocked transfer. (*See also* Claim 31).

Dependent Claim 19 is directed to the thermoplastic sheet having first and second parts, each part with different properties. (*See also* Claim 32).

Dependent Claim 20 is directed to the first and second parts having different melting temperatures. (*See also* Claim 33).

Dependent Claim 21 requires that the first part contacts the flock and is located between the second part and the flock and that the first part has a higher melting temperature than the second part. (*See also* Claim 34).

Dependent Claim 22 is directed to the first and second parts have differing viscosities when the first and second parts are melted. (*See also* Claim 35).

Dependent Claim 23 requires that the first part contacts the flock and is located between the second part and the flock and that when the first and second parts are melted, the first part has a higher viscosity than the second part. (*See also* Claim 36).

Dependent Claim 24 requires that the first and second parts are in the form of films and the films are laminated together. (*See also* Claim 37).

Dependent Claim 25 requires that the thermoplastic hot melt sheet is preformed before application to the flock and substrate. (*See also* Claim 38).

Dependent Claim 27 requires that the transfer of Claim 26 is adhered to a substrate.

Dependent Claim 29 requires that the flock comprises a plurality of flock fibers, wherein the release agent and release sheet are located on a first surface of the flock, and wherein the free surface and the first surface are defined, respectively, by opposing ends of the flock fibers.

Dependent Claim 40 requires that there is no binder adhesive in contact with the thermoplastic hot melt sheet. As discussed previously, both Higashiguchi and Abrams fail to teach a transfer having no binder adhesive positioned between the thermoplastic sheet and the flock.

Dependent Claim 41 requires that the flocked transfer of Claim 26, wherein the flock comprises a plurality of flock fibers and at least most of the plurality of flock fibers are in direct contact with the hot melt sheet.

Dependent Claim 42 requires that the substrate comprises rubber. (*See also* Claim 44).

Dependent Claim 43 requires that a fringe material extends outwardly from peripheral edges of the substrate. (*See also* Claim 44).

Dependent Claim 48 requires that the adhesive component of the hot melt sheet consists essentially of a thermoplastic hot melt material. (*See also* Claim 49).

Dependent Claim 50 requires that the thermoplastic hot melt sheet has a substantially uniform thickness and substantially flat upper and lower surfaces. As discussed previously, Higashiguchi teaches a liquid adhesive that is screen-printed onto a substrate. Inherently, this

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result in a non-uniform distribution of adhesive on the substrate. Similarly, the adhesive of Abrams is applied as a solution or emulsion, which similarly inherently results in a non-uniform distribution of adhesive on the ends of the flock. Moreover, when the solution or emulsion is applied to the ends of the flock fibers, the adhesive wicks down in between the flock fibers and mats down the fibers, further resulting in a non-uniform distribution of adhesive. Accordingly, the combination of Higashiguchi and Abrams fail to teach a thermoplastic hot melt sheet having a substantially uniform thickness and substantially flat upper and lower surfaces. (*See also* Claim 54).

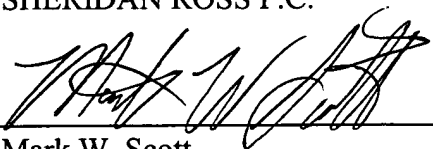
Dependent Claim 51 requires that substantially none of the thermoplastic hot melt sheet fails to contact the free ends of the flock. As discussed previously, by patterning the adhesive onto a substrate, Higashiguchi teaches an article having flock which is not in contact with an thermoplastic hot melt sheet and teaches away from a flocked article, wherein substantially none of the thermoplastic hot melt sheet fails to contact the free ends of the flock.. (*See also* Claim 52).

Based upon the foregoing, Applicant believes that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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